Patent claims

1. A rotary transformer having at least one primary winding and at least one secondary winding which can move in rotary fashion with respect thereto, characterized

- in that the primary winding and the secondary winding are each divided into at least two separate winding sections (11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 33, 34, 35, 36, 37, 40, 41, 42, 43, 44, 62, 63, 64, 65, 66, 67, 71, 72, 73, 74, 75, 76),
- these winding sections interengaging in the manner of a comb,
- and the current flow of winding sections, which lie directly opposite one another so as to form an air gap, in each case being in the opposite direction.

2. The rotary transformer as claimed in claim 1, characterized in that the winding sections (11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 62, 63, 64, 65, 66, 67, 71, 72, 73, 74, 75, 76) extend parallel to the axis of rotation (9, 58) of the rotary transformer (1, 46) and are in the form of sleeves.

3. The rotary transformer as claimed in claim 1, characterized in that the winding sections (33, 34, 35, 36, 37, 40, 41, 42, 43, 44) extend perpendicularly with respect to the axis of rotation (31) of the rotary transformer (24) and are circular.

4. The rotary transformer as claimed in one of the preceding claims, characterized in that two core halves are provided which can move in rotary fashion with respect to one another and form at least one annular

cutout for the purpose of accommodating the primary winding and the secondary winding.

5. The rotary transformer as claimed in claim 4, characterized in that the two core halves are designed to be essentially symmetrical, and each core half comprises a base plate (2, 5, 47, 52) having an integrally formed outer ring (3, 6, 48, 53) and an integrally formed inner cylinder (4, 7, 51, 56) or an integrally formed inner ring.

6. The rotary transformer as claimed in claim 5, characterized in that the base plates (47, 52) are provided with at least one integrally formed intermediate ring (49, 50, 54, 55) in order thus to provide more than one annular cutout.

7. The rotary transformer as claimed in claim 4, characterized in that the first core half has a base plate (25) having an integrally formed inner cylinder (26) or inner ring, and the second core half has a base plate (27) having an integrally formed outer ring (28).

8. The rotary transformer as claimed in one of claims 5-8, characterized in that the individual winding sections (11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 62, 63, 64, 65, 66, 67, 71, 72, 73, 74, 75, 76) are fixed in circular winding supports (10, 17, 59, 60, 61, 68, 69, 70), which are mounted on the inner sides of the base plates (2, 5).

9. The rotary transformer as claimed in one of claims 5-8, characterized in that the individual winding sections (33, 34, 35, 36, 37, 40, 41, 42, 43, 44) are fixed in sleeve-shaped winding supports (32, 39), which are mounted on the outer side of the inner cylinder (26) or inner ring and on the inner side of the outer ring (28).

10. The rotary transformer as claimed in claim 8 or 9, characterized in that the electrical connections between the individual winding sections (11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 33, 34, 35, 36, 37, 40, 41, 42, 43, 44, 62, 63, 64, 65, 66, 67, 71, 72, 73, 74, 75, 76) run in the winding supports (10, 17, 32, 39, 59, 60, 61, 68, 69, 70).

11. The rotary transformer as claimed in one of the preceding claims, characterized in that winding terminations (16, 23, 38, 45) are passed to the outside via corresponding openings in the base plates (2, 5, 25, 27, 47, 52).

12. The rotary transformer as claimed in one of the preceding claims, characterized in that a winding section comprises a single turn.

13. The rotary transformer as claimed in one of claims 1-12, characterized in that a winding section comprises a plurality of turns.

14. The rotary transformer as claimed in one of claims 4-13, characterized in that in each case one central hole (81, 88) is provided in the core halves.